

WHAT IS CLAIMED IS:

1. A heating device comprising:

a coil with a predetermined characteristic frequency;

5 a control section that supplies power with a predetermined frequency to the coil; and

an electrically conductive member that produces heat by a magnetic field that is generated by the coil, which is supplied with predetermined power from the control section,

10 wherein the predetermined characteristic frequency of the coil differs from a range of frequencies of voltage and current that are output from the control section.

15 2. The heating device according to claim 1, wherein the predetermined characteristic frequency of the coil differs from a frequently used frequency, which is included in a range of frequencies of voltage and current that are output from the control section.

20 3. The heating device according to claim 2, wherein the heating device is mounted in an image forming apparatus that forms an image of an object to be copied, and

said frequently used frequency is a frequency that is used when one of a warming-up operation mode, a ready operation mode and a copy operation mode is selected.

4. The heating device according to claim 1,
wherein the predetermined characteristic frequency of
the coil differs from a frequency, which corresponds to
an integer number of times of at least one of
5 frequencies of voltage and current that are output from
the control section.

5. The heating device according to claim 4,
wherein the coil includes a first coil that is supplied
with power of a first frequency, and a second coil that
10 is supplied with power of a second frequency, and
there is a difference of 10 kHz or more between
the first frequency and the second frequency.

6. The heating device according to claim 4,
wherein in a case where the same power is supplied from
15 the control section to the first and second coils, the
first coil has a first impedance that is different from
a second impedance of the second coil.

7. The heating device according to claim 4,
wherein the heating device is mounted in an image
20 forming apparatus that forms an image of an object to
be copied, and

said at least one of frequencies is a frequency
that is used when one of a warming-up operation mode, a
ready operation mode and a copy operation mode is
25 selected.

8. A heating device comprising:

a first coil that has a first inductance and is

supplied with power having a first frequency;

a second coil that has a second inductance and is supplied with power having a second frequency;

a control section that supplies predetermined powers to the first and second coils at a predetermined timing; and

an electrically conductive member that produces heat by a magnetic field that is generated by the first and second coils, which are supplied with the predetermined powers from the control section,

wherein the control section supplies power of the first frequency to the first coil, and power of the second frequency to the second coil.

9. The heating device according to claim 8, wherein in a case where the same power is supplied from the control section to the first and second coils, the first coil has a first inductance that is different from a second inductance of the second coil.

10. The heating device according to claim 9, wherein in a case where different powers are supplied from the control section to the first and second coils, the first coil is supplied with power of the first frequency, which is different from the second frequency of power that is supplied to the second coil.

11. A heating device comprising:

a coil that is supplied with predetermined power and generates a predetermined magnetic field;

a core member with a predetermined characteristic frequency, the core member being disposed near the coil;

5 a control section that supplies power with a predetermined frequency to the coil; and

an electrically conductive member that produces heat by a magnetic field that is generated by the coil, which is supplied with the predetermined power from the control section,

10 wherein the predetermined characteristic frequency of the coil differs from a range of frequencies of voltage and current that are output from the control section.

12. The heating device according to claim 11,
15 wherein the core member is a three-dimensional rectangular body with rectangular surface having a dimension r on one side and a dimension h on another side, the shape meeting the following condition,

$$h/r^2 < 2.7, \text{ or } h/r^2 > 6.3.$$

20 13. The heating device according to claim 12, wherein the core member is formed of a magnetic body.

14. The heating device according to claim 11, wherein the coil comprises a first coil and a second coil, the first coil being disposed closer to the
25 electrically conductive member than the second coil.

15. The heating device according to claim 14, wherein the first coil has a lower impedance value than

the second coil.

16. The heating device according to claim 15, wherein the first coil and the second coil have an equal inductance value.